

---

III. *Observations on the Phalæna Bombyx Lubricipeda of Linneus, and some other Moths allied to it. By Thomas Marsham, Esq. Secretary to the Linnean Society.*

*Read August 5, 1788.*

WITH a view to promote the interests of that science which we profess to cultivate, I take the liberty of offering to the consideration of the Linnean Society a few remarks, made with a desire of correcting an error into which the celebrated Linneus has fallen in describing his *Phalæna Bombyx Lubricipeda*; which, although a very common insect, has been by him confounded with three other species; an error in which he has been followed by Fabricius and others. But before we enter on this subject, I cannot help expressing a wish, that entomology were more studied as a science; from a conviction that many interesting observations and discoveries have frequently been made, which are concealed, or totally lost, for want of a proper mode of communicating them to the public. Few of the English names of insects being generally known, and many of them very local indeed, scarcely any two observers, who confine themselves to these names, can always understand each other. If the study of insects be of any utility, clearness and precision in its pursuit are well worthy our attention. To enumerate the uses of this study, would be only to repeat what has been often said before. Yet if the appearance of an harmless caterpillar

in greater numbers than usual could cause so serious an alarm to the inhabitants of London and its environs, as happened in the year 1782, when the churchwardens and overseers of the neighbouring villages, after ordering rewards for collecting these caterpillars, attended to see them burnt by bushels; surely much praise was due to the author of that curious and well-timed Essay on the Brown-tail Moth, in which, by a circumstantial and faithful history of the little innocent animal, he restored tranquillity to a terrified multitude.

It is from such accurate and critical investigations of the nature and œconomy of these lower orders of animals, and a mutual communication of our discoveries, that we must expect profit. For although the labours of an individual taken separately may afford little; yet when collected, compared, and digested, they may very much enrich the general stock of knowledge. Could we with certainty attain a true history of the different states of each particular insect, we might be enabled to form a complete system, and also a method of classification more natural, easy, and less liable to error and confusion than those now in use; but this, if ever accomplished, must be a work of time. In the mean while let us try how much is to be gained from a careful attention to specific distinctions. It is absolutely necessary to consider the different states of the insect, because many species that appear similar in their larvæ are totally different in their perfect states, and vice versa. Few people discover any difference between the maggot of a nut and that of an apple; and yet there are scarce any two insects more unlike when arrived at perfection: the one a beautiful little moth, and the other a remarkable beetle of the genus *Curculio*. They are however easily distinguished, even in their first state, by an attentive observer. An entomologist should always endeavour to be acquainted with his insect in all its changes, as a good botanist always desires to know his plant in every stage of its growth. Varieties in the same species of insect  
are

are certainly not so numerous as many have conjectured; for though Nature frequently sports in this way in the Lepidoptera Class, where we see different markings and shades of colour in the same species, as in Phal. Geom. Prunaria, Defoliaria, &c.; yet an accurate eye will soon distinguish some constant characteristic mark which never fails to run through and unite them: for example, the long comma-like mark in the first instance, and the roundish dark spot in the second; neither of which ever vary. The distinction of sex is indeed variously marked, and requires peculiar attention. Some larvæ produce winged males and apterous females, which are so totally different in their appearance, that it would be impossible to determine them to be the same species, if we were not acquainted with their history. Some females again have small, or as it were only rudiments of, wings; and others differ from the males so much in colour as not to appear similar. In some classes the distinction is strongly marked by the antennæ; in others one sex is furnished with horns, of which the other is destitute. So that a considerable degree of attention is requisite before we attempt to determine; and therefore those entomologists are most to be depended upon, who are at the pains to trace their insect through its different changes from the egg to its perfect state; thus acquiring truth from the fountain head. And to such I would particularly recommend a scientific arrangement, that their observations may be more diffused, and become generally useful. In the course of my own observation, I have never seen moths bred from the same eggs so different as to be mistaken for distinct species, except in the before-mentioned cases, where the females were apterous, or differed from the males in the colour of their wings. In the latter instance, indeed, the markings are generally similar in form, and only differ in shade and colour. If we reflect on the wonderful labours of the great Linneus, and the immense numbers of objects which he has arranged and described, comprehending the three kingdoms of Nature,

we shall not be surpris'd that he has sometimes erred: "*humanum est errare.*" But our astonishment will be increased when we carefully examine for ourselves, and observe how seldom he did so. For we find, that several errors that have been imputed to him arise from the similarity of many species to each other, and our not having seen the true species of Linneus. The truth of this observation has been proved in many instances, since the arrival of his valuable cabinet in this country. Insects of various species are so nearly connected, that it is, as I have before observed, impossible to discriminate them without attending to their different states: and this could never be expected from a man who was describing all the animals on the habitable globe; as in many cases he was obliged to describe from bad specimens, and often to depend on the representations of others. Many authors, fearful of multiplying species, appear to have fallen into the contrary extreme; and Linneus himself has either considered different Phalænæ in many instances as the same, or he was a stranger to many of the most common in this country. I shall however at present confine myself to his Phal. Bom. Lubricipeda and Mendica, and hope that others will endeavour to make similar remarks on those species that appear to be erroneously united. To render the matter as clear as possible, I have subjoined a drawing of four different Phalænæ, that appear to have much affinity, in their three states, and have added a specific description of each, together with the synonyms of various authors; by which it will appear how much they have been misquoted and misapplied.

### PHALÆNA BOMBYX.

ERMINEA. *Tab. 1. f. 1. Cream Ermine.*

B. Alis albis punctis nigris sparsis, abdomine quinquefariam nigro punctato.

*Linn. Syst. Nat. 829. 69. lubricipeda. Faun. Suec. 1138. fœm.*

*Fab.*

*Fab. Syst. Ent.* 576. 68. *Sp. Inf.* 190. 93.

*Gæd. Inf.* vol. 1. tab. 23. fig. 38. *List. Gæd.* 96. *Rai. Inf.* fig. 195.

n. 40. *Albin. Inf.* 24. f. 36. g—k. *Wilkes* 20. t. 3—5.

*De Geer. Inf.* 1. t. 11. f. 8. *Roes. Inf.* 2. t. 46. *Esper. tom.* 3. tab. 66.

fig. 6—10 *Menthastri. Harris Aur. pl.* 38. g—b. *Ernst.*

*Pap. d'Europe, pl.* 158. n. 204.

Habitat in arboribus pomiferis, urticâ, atriplici, quercu.

Expansio alarum 1 unc. 6 lin.

*Descrip.* Femora, præsertim antica, lanugine ferrugineâ vestita; Corpus album; Alæ adspersæ punctis nigris plurimis in superiorum paginâ superiore; Abdomen luteum quintuplici macularum nigrarum ordine, quorum unus dorsalis, duo utrinque laterales—Ano albo quo certo certius, a *Ph. lubricipeda* differt.

LUBRICIPEDA. Tab. 1. f. 2. Cream Dot Stripe.

B. Alis lutescentibus punctis nigris plerumque ordine oblique-transverso positis.

*Linn. Syst. Nat.* 829. 69. β. *Faun. Suec.* 1138. mas. *Fab. Syst. Ent.* 576. 68. *Sp. Inf.* 190. 93.

*Gæd. Inf.* vol. 1. 38. *List. Gæd.* 93. *Rai. Inf.* 196. n. 155.

*Merian Eur.* 1. t. 46. f. 65. *Alb. Inf.* 24. f. 35. a—d. *Frisch. Inf.* 3. t. 8.

*Ammiral. t.* 6.

*De Geer. Inf.* 1. t. 11. f. 7. *Roes. Inf.* 2. t. 47. *Wilkes* 20. t. 3.—6.

*Esper. vol.* 3. tab. 66. fig. 1—5.

*Harris Aur. pl.* 16. h—l. *Ernst. Pap. d'Eur. pl.* 157. n. 203.

Expansio alarum 1 unc. 6 lin.

*Descrip.* Variat colore alarum albido et lutescente. Maximè affinis *Ermineæ*, a quâ differt punctis plerisque serie obliquâ positis; quod

quod in illâ omnino desideratur—Anus variat pro re nata  
flavescentior; neque unquam albus.

MENDICA. *Tab. 1. f. 3. Spotted Muslin.*

B. Alis masculis fuscis obscuris. } utrisque nigro-punctato.  
— foemineis niveis pellucidis. }

*Linn. Syst. Nat.* 822. 47. *Faun. Suec.* 1127. mas. *Pet. Gaz.*  
44. fig. 8. foem.

*Rai. Inf.* 196. *An.* 97. 6. foem. *Reaum. Inf.* 2. t. 1. fig. 1—9.

*Esper. vol. 3. tab. 42. fig. 1—9. Harris Aur. pl. 35. m.*

Expansio alarum { Mas, 1 unc. 1 lin.  
                              { Foem. 1 unc. 5 lin.

*Descrip.* Mas. Alæ anticæ fuscæ, maculâ albidâ, mediâ, obsoletâ,  
et punctis circiter 9 nigris, sparsis—posticæ concolores punctis  
4 seu 5 nigris marginem versus.

Fœmina. Alæ omnes pellucidæ, superiores punctis circiter 9 nigris,  
sparsis; inferiores circiter 7, marginalibus.

In utrâque antennæ nigræ, femora lutea.

PAPYRATIA. *Tab. 1. f. 4. Water Ermine.*

B. Alis niveis, punctis ad apicem nigris, abdomine quinquefariam  
nigro punctato.

*Albin. Inf.* 21. f. 30. e—h.

Expansio alarum 1 unc. 6 lin.

*Descrip.* Maxime affinis Ph. Ermineæ, at alæ punctis solummodo  
ad apicem circiter sex nigris; scilicet quatuor confertis in ipso apice,  
longitudinaliter positis, et duobus intra hæc transversim ductis,  
distantibus. Caput, thorax et abdomen ut in Ph. Erminea.

Larva habitat in plantis aquaticis.

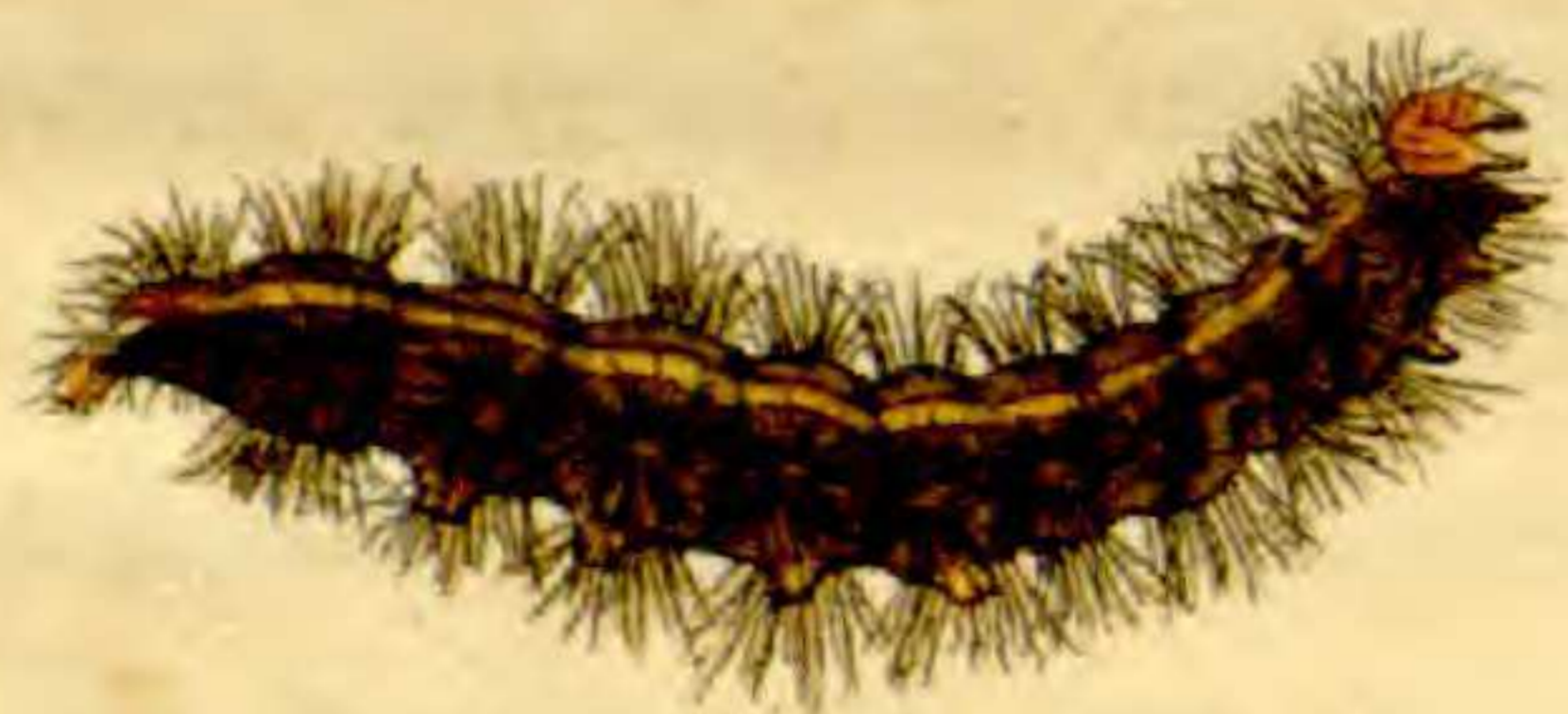
Fig. 1. to which I have given the name of *Erminea*, appears to be the moth which Linneus describes in the *Syst. Nat.* as *Lubricipeda*, and to that moth is the name affixed in his cabinet. In the *Fauna Suecica* the particular description is, “*Mas alis flavescentibus ordine oblique transverso punctorum nigrorum*,” which is an exact description of fig. 2. to which I have retained the name of *Lubricipeda*; not only because that name, taken from the motion of the caterpillar, agrees better with this species than the other, but because every author who has figured it since Linneus has constantly so applied it, though they have given different names to fig. 1. Notwithstanding Linneus has united these two species of *Phalæna*, and mentioned them as male and female of each other, it is but justice to observe, that it appears done contrary to his own opinion; for, in quoting the synonyms of Wilkes and Rœfel, he makes one a variety at least, with his usual mark  $\beta$ , and then adds, “*Varietatem  $\beta$  non distinctam esse speciem docuit De Geer*.” That accurate author has written a long paper upon the subject of these moths, in which he has endeavoured to prove that these two species are the same. He however describes but one kind of caterpillar, from which he had males yellow, and females white. This is in some respects the fact; for the female of fig. 2. is much lighter in colour than the male, and sometimes approaches to white. He refers to Reaumur to prove this assertion: but I am clearly convinced, that in the second memoir of the second volume of that illustrious author, it is the *Mendica* of Linneus which is described; and that the others are not mentioned. For with that moth his description perfectly coincides; the female of which has some resemblance to that of *Erminea*, as may be seen in fig. 3.; but will be found totally distinct, not only on account of the colour of its male, which, as Reaumur observes, is the “colour of a rat,” but also from the semi-transparency of the wings of the female, from whence English collectors have named it the *spotted muslin*.

L

Linneus

Linneus himself appears to have been unacquainted with the female Mendica; and the specimen of the male in his cabinet being a bad one, with the black spots obliterated, he describes it, cinerea tota, femoribus luteis. This however is not the case; for the male is spotted like the female, as may be seen in the drawing, fig. 3. 6. There is indeed a bad specimen of the female of this moth in his cabinet; but it is placed indiscriminately with Lubripeda and Erminea. I have endeavoured to give to each the synonyms quoted by Linneus; to which I have added many that have been published since his work was printed, omitting several that appeared only copies of Linneus. But even to them I am under some obligation, as they have referred me to synonyms which others had overlooked. As the similarity of the colour in the bodies of the two first species appears to have been the occasion of their having been placed together, I have added another (vide fig. 4.), and named it Papyratia, exactly agreeing with them in that particular, although perfectly distinct, as the larva and mode of living testify. This moth is more rare than either of the others, and I find but one figure of it, which is in Albin, and well executed. As almost every author who has given figures of the two first insects in their different states, makes them distinct species, it may with some propriety be asked, where is the necessity of adducing further proof on the subject? The necessity will appear evident, when we consider, that as the *Systema Naturæ* and *Fauna Suecica* of Linneus, and *Syst. Ent.* of Fabricius, the most valuable and useful scientific books, agree in uniting them, and quote such respectable authority as Reaumur and De Geer; and as I am ignorant of any specific descriptions having been given, it appears absolutely necessary for the young entomologist to have them separated and clearly distinguished; and the more so, as Ernst, in his admirable work, *Papillons d'Europe*, after having

1



*Phalæna B. Erminea.*

2



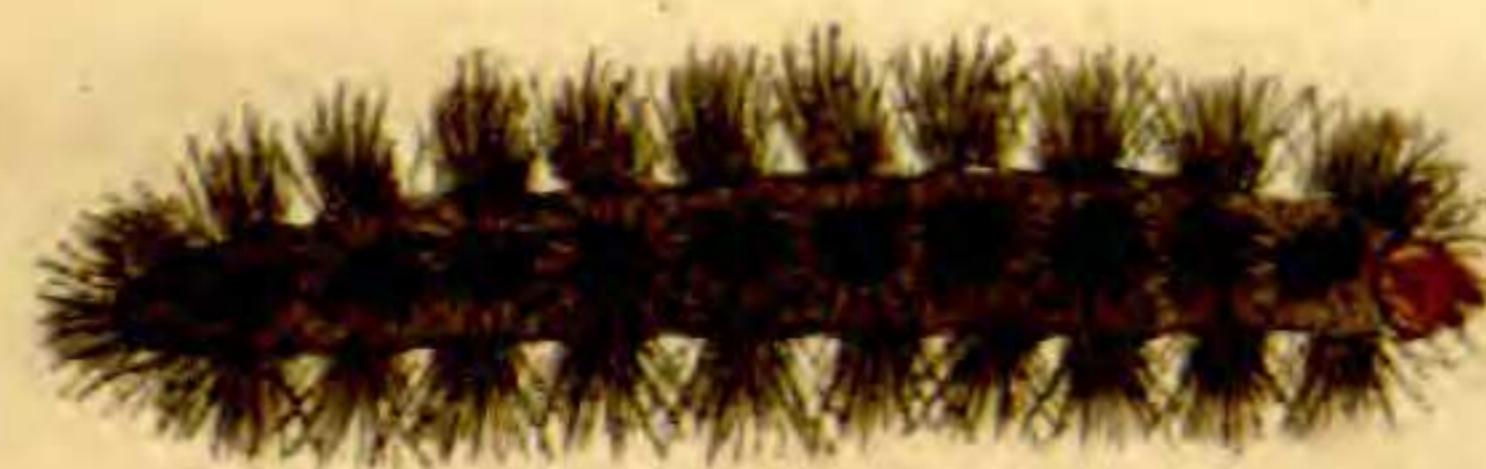
*Phalæna B. Lubricipeda.*

3



*Phalæna B. Mendica.*

4



*Phalæna B. Papyratia.*

*Mackenzie sc.*